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WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK3WFI: Sundays, 1100 hours EST, 7146 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK3WFI. Intrastate working frequency, 7125 Kc.

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EDITORIAL

★

AUSTRALIAN RADIO AMATEUR CALL BOOK

Last year the Wireless Institute of Australia completed two years of negotiations to obtain the exclusive rights to publish the list of licensed Australian transmitting Amateurs. The first edition was "on the street" in April, and how it was received by the Amateurs and Short Wave Listeners after so many years without one, is now history.

After a year in circulation the Institute can look back with pride at the success of its first attempt to publish a book of this nature. However, without the loyal support of Advertisers and the sales to Amateurs and Short Wave Listeners, the success of the publication could not have been achieved. To all these people, the Institute says "thank you!"

Although the publication sold well, it was surprising the quantity left over, considering that an up-to-date listing had not been printed for some years. A Commonwealth-wide check on sales figures indicates a fairly high percentage of non-purchasers amongst the DX men, who, according to their own line of thinking, are not so concerned with the names, call signs and addresses of Australian Amateurs as they are with those outside of Australia.

The Institute cannot force each and every member to purchase a copy of its Call Book, although it is not considered infradig to expect it just the same. The book is not dear ranged alongside most publications today. Every copy sold helps to keep the publication alive, up-to-date and with added attractive sections.

This month—July, 1955—the second edition is available carrying over one thousand changes; every change of address, and altered and new call signs made since the last publication are included.

In addition a new and comprehensive section is included listing all the International Awards for which the DX enthusiast can apply. It is believed that this is the most complete list published in any one journal before, and includes Awards for the Short Wave Listener as well.

This is the first addition to the Australian Radio Amateur Call Book and, it is hoped, the forerunner of a number of proposed sections that will be added manually as each new edition goes to press.

It is your book! Your support will maintain a valuable service not only to Australian Amateurs, but Amateurs all over the world.

FEDERAL EXECUTIVE.

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Wideband Audio Phase Shift Networks

PART TWO

THOSE UNUSUAL VALUES

In searching for components of the correct values for the designs worked out (see Part One, previous issue), it is unlikely that you will be able to obtain them exactly. Choose either all your condensers (or all your resistors) as near as possible to the "target" values aimed for, as an error in one pair of components can be compensated for as follows:

In each network there are three pairs of components and the R/C products for these three pairs are the same, i.e.

$$R_1 C_1 = R_2 C_2 = R_3 C_3.$$

Referring to the A network design,

$$R_1 = 15,000 \text{ ohms}$$

$$C_1 = 0.00714 \mu\text{F}.$$

The product of the two is

$$15,000 \times 0.00714 = 107.1.$$

The product of $R_2 C_2$ will be the same, i.e. 107. Product of $R_3 C_3$ will differ if resistance voltage dividers are used on the outputs.

Incidentally, all calculations for this article were done on a slide rule and decimals are only taken to five places, so if there is a slight discrepancy between some of the sets of R/C values for each network don't worry, the error will not be worth considering.

Assume our nearest condenser, measured 0.00714 μF . To find the new target value for R_1 =

$$\frac{107.1}{0.007} = 15,300 \text{ ohms.}$$

We could, of course, fix the value of R_1 and determine a new value for C_1 —

$$\text{from } C_1 = \frac{107.1}{R_1}$$

All three pairs of components in each network can be treated similarly, but remember the R/C value of the B network pairs will be different to that of the A network.

Yet another method of checking the operation of pairs of components is available to us, once again by the use of the c.r.o. and the audio oscillator. The design frequency for the A network was 1,488 cycles, and that for the B network 329 cycles. At 1488 cycles the three pairs of components in network A will give us a 45° phase shift, likewise the pairs of components in network B will behave similarly at 329 cycles.

The test set-up needed for this will be the same as that used to align the type of network used in the G.E. "Ham News" S.s.b. Junior Transmitter and Signal Silencer Receiving Adaptor, which is the next unit to be discussed. The c.r.o. patterns observed will be the same, but the tests must be done at the design frequency of the A and B networks, not forgetting of course to check the c.r.o. to see if phase shift correction is required.

Fig. 8 shows the basic schematic of the phase shift unit popularised by the articles on s.s.b. equipment in G.E. "Ham News." This unit is one of the simplest and has a lower insertion

loss. It is rapidly gaining in popularity and is manufactured commercially in the U.S.A. by at least one firm and whilst this article was in course of preparation, the writer was informed that one Sydney manufacturer will, upon request, make a kit of precision condensers for this particular phase shift unit available at quite a reasonable figure. The differential phase shift between the outputs can be kept to within $\pm 1.3^\circ$ of 90° when properly adjusted, over a frequency range from 225 cycles to 2750 cycles. This means that over a frequency range of 12:1 the worst suppression obtainable is 39 db, and the average is around 45 db.

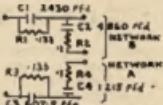


Fig. 8.—Phase Shift Unit popularised by G.E.

This unit is fed from an unbalanced push pull source as will be seen from Fig. 11. The arm of the pot, in the input circuit is grounded and from A to ground the voltage measured with a v.v.t.m. should be 28.57% of that measured from B to ground.

This design incidentally is worked out on the basis that the geometric mean frequency of the audio range is 800 cycles, as against the frequency of 700 cycles used for the design of the lattice networks just dealt with.

In connection with the components of this network, the values of the 0.1 meg. and 0.133 meg resistors should be as close as possible to the ratio of 3:4 to each other, this is more important than their actual value. In VK and ZL, precision 0.05 and 0.1 meg. resistors are available and the above values can be built up using these with little trouble. The 0.133 meg. being obtained by using 0.05 and 0.1 meg. connected in parallel, in series with another 0.1 meg. resistor.

The condensers can be built up by using a fixed condenser slightly less capacity than that specified, paralleled by a variable padger unit of suitable size, to enable the exact capacity required to be obtained during the alignment procedure.

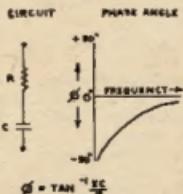


Fig. 9.—Characteristics of Series and Parallel R/C Circuits.



BY N. SOUTHWELL,* VK2ZF

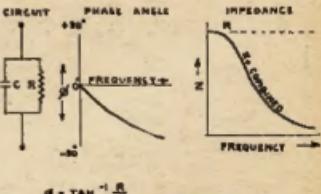
For the easy going, there is an easy way out. Measure all the components on a bridge, obtain the correct values and assemble them. The result will be satisfactory, but the performance of such a network would not be as good as one which was individually aligned. This is brought about by the use of different reference standards for resistance and capacity, the alignment by means of the c.r.o. and oscillator overcomes this difficulty.

Amplitude balance between the two outputs in this design is satisfactorily obtained by varying the cathode bias, and thus the output, of one of the tubes following the phase shift unit, the correction usually required is small. This type of network must be fed directly to the grid of a tube as shown.

To align the networks, wire up the circuit shown in Fig. 10. The transformer used should be of good quality, the ones the writer has seen recommended for use with these networks in the U.S.A. are unobtainable in Australia, but no trouble was had with three transformers tested in conjunction with these units. Feed tone from the oscillator and adjust the arm of the pot until equal voltages are obtained, between it and points A and B. Check these voltages by use of the c.r.o. With no signal applied to the horizontal input, connect the vertical input in turn between A and B to ground, and adjust the arm of the pot for equal deflection of the trace in each position.

With the phase shift unit components mounted, but not wired, connect R_1 and C_1 in series. Then connect the free end of C_1 to A, and the free end of R_1 to B. With the c.r.o. connected as shown, it can be checked to see if any phase correction is required by connecting leads C and D temporarily to A, having the oscillator set up to a frequency of 490 c.p.s. Then move lead D from A to the junction of C_1 and R_1 , adjust C_1 until a circular trace is obtained as described previously. Conduct this adjustment at a low level to avoid overloading.

Having obtained the correct pattern, disconnect R_1 and C_1 and connect R_2 and C_2 up in series in their place. Move the oscillator frequency to 326.7 c.p.s., check the c.r.o. to see if phase correction is required, and repeat the line-up operation on this pair of components. These four components comprise one network.



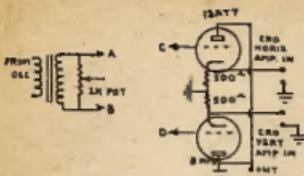


Fig. 10.—Test and Adjustment Circuit for Phase Shift Networks.

See text for connections to A, B, C, D.

The same procedure is followed when lining up the components of the second network. R_3 and C_3 are adjusted at a frequency of 1960 c.p.s. and R_4 and C_4 at 1307 c.p.s.

To check the complete phase shift unit after wiring is complete, use the set-up in Fig. 10, connecting leads A and B to the input and leads C and D to the two outputs. Refer to Fig. 11 for the network connections. Set the oscillator frequency to 1250 c.p.s. and adjust the arm of the pot until a circular trace is obtained on the c.r.o. Swinging the oscillator frequency now from 200 c.p.s. at 3,000 c.p.s., the c.r.o. pattern should be perfectly circular at 440, 1225 and 2500 c.p.s., wobbling a little from side to side as intermediate frequencies are covered. For use in transmitters, the complete network set up is as shown in Fig. 11.

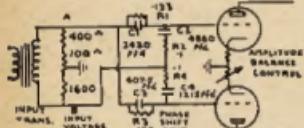


Fig. 11.—Complete Circuit of Phase Shift Unit in Fig. 8 connected for use in a Transmitter.

The tapped 100 ohm resistor shown in series with two other resistors across the secondary of the input transformer should be a potentiometer with the moving arm going to earth.

It will be noticed that the frequencies used in the alignment of this type of network are not round figures. Don't let this worry you if you are after accuracy, as there is a fairly simple way out of the difficulty. The ratio of these frequencies to each other is more important than their actual frequency. All frequencies used are sub-harmonics of 3920 c.p.s. If a stable simple oscillator of fixed frequency is built, whose output approximates the above figure, the main audio oscillator can be set to the frequencies required by feeding both oscillator outputs to the c.r.o. and using Lissajous figures to set the frequency of the variable oscillator. The procedure for obtaining these figures and their interpretation is simple and is covered in most Amateur Handbooks.

There is another type of unit which is similar as far as electrical circuitry is concerned to that of the G.E. unit shown in Fig. 8. However, the ratios that the various components bear to each other is different. The design equations differ from the lattice type network equations given earlier. However, from the design equation for one of these units covering

a frequency range 300-3000 cycles, the following ratios hold good. (For nomenclature refer to Fig. 8, but note, these ratios do not apply to the values given in Fig. 8 for the G.E. network.)

$$\frac{R_1}{R_2} = \frac{R_3}{R_4} = \frac{C_2}{C_1} = \frac{C_4}{C_3} = 1.58$$

$$\frac{1}{R_2 \times C_2} = \frac{1}{R_1 \times C_1} = 3,015$$

$$\frac{1}{R_4 \times C_4} = \frac{1}{R_3 \times C_3} = 11,780$$

To construct one of these units, pick a common value for R_1 and R_3 , or C_1 and C_3 and calculate the rest of the values from the data above. The input voltage divider in this case had best be solely a pot of 1,000 ohms or so. The input voltages required will be unbalanced, but a different ratio to those stated for the G.E. network. Adjust the divider, using the set-up in Fig. 10, with a completed unit and a frequency of 1,000 cycles/sec. Using equal gain in each oscilloscope channel, adjust the input pot until the circular pattern is obtained on the screen. The frequencies for adjustment of the pairs of components will be those where the reactance of the condenser in each pair equals the resistance that goes with it, thus giving a 45° phase shift. The test set-up will be as in Fig. 10 and used as for the G.E. network.

From experience gain since the article was first written has proved that the lattice networks are more tolerant regarding operating conditions than the G.E. type networks.

NETWORK CONSTRUCTION

The most popular form of construction appears to be that of mounting the components on a section of "fish back" strip, so that they are readily accessible during initial testing and adjustment. It will be found best to wire up the strip, also attach input, output and earth leads to it before mounting components, then mount the condensers and finally the resistors. This sequence of working gives less chance of the resistors becoming heated accidentally. If carbon resistors are used, they must at all costs be protected from heating.

This is best accomplished by leaving their pigtail uncut and clamping each one between the jaws of a pair of bulldog pliers as a thermal shunt, to keep heat away from the components whilst the soldering of that pigtail is taking place. Do not be in a hurry to remove the pliers, wait until the work has cooled. Carbon resistors, upon being heated, change their value, it usually increasing, by anything up to 20%, and this change is permanent—so be careful.

One watt and half watt rating resistors have been used with no trouble of any sort in a number of networks, some of which have been in use three years and have been stable in all respects. Quarter watt resistors have not been used as on occasions the writer has found these to "age" more than the larger rating types. Some brands of resistors have a better reputation for stability than others, these brands are generally known to Amateurs from hard experience. Naturally choose reputable makes of resistors for use in phase shift units.

Should you use wire wound precision resistors, then ignore remarks made concerning avoiding heating the resistors, however be sure your precision resistors are wire wound, there are carbon precision resistors available which have an accuracy of $\pm 1\%$.

Anyone nervous of heating the resistors can easily manufacture a mounting strip using small bolts and nuts thus obviating soldering the phase shift unit resistors in place.

Condensers used should be mica, or silver mica; postage stamp varieties are quite suitable. Do not use paper or metallized paper condensers. Ceramic dielectric condensers are also unsuitable. Variable condensers, where needed, can be of the mica compression type, used as paddler condensers in B/C sets. It is better not to try and make the unit too compact; on more than one occasion the writer has seen whole units wrecked because they became over-heated during soldering, due to their small physical size.

The signal level at which the phase shift units operate is relatively high and no need has been found to shield any to date because of feed back trouble. From a long range point of view, it is best though to mount the unit inside a case, and wire it to a tag strip mounted outside, or to terminals on the case. Then connections to the unit can be altered readily, with no fear of heating up the components.

GENERAL

The close tolerances called for when selecting component values for use in phase shift units has caused concern to nearly all who have thought of building them. If the components vary from the "target" values aimed at, the operating range of the network will shift up or down the audio range. If the components are larger than required the frequency will drop and vice-versa.

Intelligent use of an oscillator and a c.r.o. will eliminate any doubt in your mind as to just what is taking place in a phase shift unit. Remember that components can be split up into pairs and checked, as described previously, should you have reason to believe that something is wrong with the operating characteristics of any network. The information in this article should be sufficient to enable you to trouble-shoot any type of unit.

The differential phase shift of the two networks (i.e. the phase difference between their outputs) depends upon the accuracy of their components. The ratio of desired to undesired sideband depends also upon this accuracy, which is really how much the phase shift difference in the two network outputs depart from the 90° figure aimed at. The ratio of the two side bands can be obtained from the formula—

$$\frac{\text{undesired sideband}}{\text{desired sideband}} = \tan \left(\frac{D}{2} \right)$$

where D = the deviation in degrees from 90° between the two outputs.

At different frequencies in the operating range, the deviation will be different (remember how a perfect circle trace in the c.r.o. cannot be obtained over the whole operating range). This formula can be used to obtain the sidebands.

(Continued on Page 13)

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Modification of MN26 Receivers

BY S. T. CLARK,* VK3ASC

THESE receivers were manufactured in quantity during the War by Bendix Radio for use in aircraft as part of MN31 Automatic Radio Compass equipment.

From time to time numbers of these receivers have been available inexpensively on the disposals market. They are of superlative construction and cover a useful frequency range.

The modifications to be detailed are as follows:

- (1) The receiver is for use as a car radio.
- (2) A.c. powered for use as a b.c. receiver in the shack, or as an i.f. channel following either a converter or a receiver such as the BC346.
- (3) Readers are referred to "QST" for December, 1952, "A Bargain Novice Station." This deals with the conversion of an MN26Y for use on 80 metres and the addition of a simple one-valve trans-

* Flat 20, 100 Drummond Street, Carlton, Vic.

mitter operated from a built-in power supply.

Fig. 1 shows the circuit of an MN26 Receiver as modified for a.c. operation.

Since this receiver was originally designed for operation as part of an A.D.F. system, it contains components which are not necessary for Amateur use.

1.—As Car Radio

For use as car radio where installed generator is to be used or other suitable type (230v. 70 Ma. will be sufficient) substituted, in this case the components L7-1, L7-2, C9-1, C9-2, L8, C37-2, and C37-3, which comprise the l.v. hash and h.t. filters, should remain. Also the tuning motor will be found to operate satisfactorily on half its normal voltage. Since it is expected that owners will wish to mount the set in the boot of the car, where full remote operating facilities are desired, this too should remain. The set can then be operated from the MN26 Remote Control Unit which

should be mounted near the driving position.

The other alternative, one which will be more attractive to many, is to make the modifications along similar lines to those described in section 2, using the space so vacated to accommodate the few components which remain in the rear section of the chassis and mount the generator in some other convenient location.

If this is done the physical size of the receiver can be greatly reduced by such a re-arrangement and the cutting off of the rear portion of the chassis and the cutting down of the case to accommodate it.

The receiver can then be mounted in any convenient position in the front of the car. VK3AFA has modified a number of these receivers, mounting some of them beneath the front seats of certain cars.

2.—For Broadcast Reception

To modify the receiver for broadcast reception the following components are

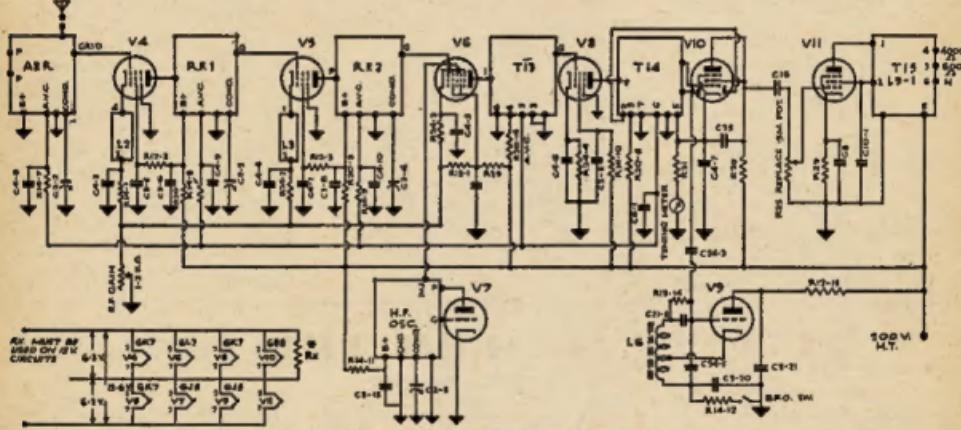


Fig. 1—MN26 Receiver Circuit modified for a.c. operation.

*Rx—For 12v. operation as follows: 6F6 15.75 ohms, 6K6 63 ohms, 6V6 42 ohms, or number 46 pilot lamp.

C1-1 to C1-15 5-52 pF. variable.
 C2-1 to C2-5 5-section variable, 12.5-400 pF.
 C2-1 to C2-6-10 500v. d.c.w. mica-mold.
 C2-1 to C2-11 500v. 10% 300v. d.c.w. mica-mold.
 C2-1, C2-3 0.1 uF. 200v.
 C2-1, C2-3 0.05 uF. 200v.
 C2-5 0.05 uF. 400v., oil.
 C2-6 0.05 uF. 500v., oil.
 C2-7 0.05 uF. 400v., oil.
 C2-8 0.05 uF. 500v., oil.
 C2-9 0.05 uF. 500v., oil. 0.5 uF. 100v. d.c.w.
 C1-10, C1-12-2 section, 8 uF. 400v., oil.
 C1-11 to C1-13-3 55 pF. MEC20K 500v. d.c.w. ceramic.
 C1-13, C1-15 50 pF. 500v. d.c.w. ceramic.
 C1-16 100 pF. 500v. ceramic.
 C1-17, C14-3-0.006 uF. 25% tol. 300v. d.c.w. mica.
 C1-18 0.001 uF. 300v. mica.
 C1-19 0.001 uF. 300v. mica.
 C1-20 0.001 uF. 500v. mica.
 C1-21, C19-2-350 pF. 5% tol. 500v. d.c.w. mica.
 C20-1, C20-2-10 pF. 500v. d.c.w. ceramic.
 C21-1 to C21-4-100 pF. 500v. mica.
 C22-1, C22-2-300 pF. 5% tol. 500v. d.c.w.
 C22-1, C22-2-75 pF. 500v. d.c.w. mica.
 C23-1 to C24-3 0.001 uF. 500v. 10% tol. ceramic.

C23-15 pF. mica.
 C23-20 pF. mica.
 C23-25 0.006 uF. 5% tolerance, mica.
 C23-26 0.006 uF. 5% tolerance, mica.
 C23-27 0.006 uF. 5% tolerance, mica.
 C23-28 0.006 uF. 5% tolerance, mica.
 C24-1 to C24-6-500 pF. 2% tol. 500v. d.c. mica.
 C24-50 0.01 pF. 15% tolerance, mica.
 C27-1 to C27-3-3 section, 0.1 uF. 400v. d.c.
 C27-4 to C27-5 0.001 uF. 10% tolerance, mica.
 C28-1 to C28-3-0.1 uF. 10% tolerance, 400v.
 C40-V7 grid parallel pentode.
 L1-40 ohm. H.V. R.F.C.
 L1-1-Filiter Choke, 6 H. 50 Ma. part of T15.
 L1-2-Filiter Choke, 6 H. 50 Ma. part of T15.
 NE1-Overload Discharge Neon, 50V., 1/2 watt.
 RI-Loop gain control, 15,000 D taper pot.
 RI-300 ohms.
 R8-1 to R8-3 3 ohm, 1/2 watt, wirewound.
 R10-1, R10-2-40 ohm, 1/2 watt.
 R11-1, R11-2-100 ohm, 1/2 watt.
 R12-2 to R12-15-0.1 megohm, 1/2 watt.
 R13-1, R13-2-100,000 ohms, 1/2 watt.

R14-1 to R14-18-50,000 ohms, 1/2 watt, 10% tolerance, ceramic.
 R15-1, R15-2-1,000 ohms, 1/2 watt.
 R16-1, R16-2-1,000 ohms, 1/2 watt.
 R19-1, R19-2-1,000 ohms, 1/2 watt.
 R20-2 to R20-5-5,000 ohms, 1/2 watt.
 R21-200,000 10% tolerance.
 R21-1 to R21-2-1/4 megohm, 1/2 watt.
 R22-1, R22-2-100 ohms, 1/2 watt.
 R24-1 to R24-5-600 ohms, 1/2 watt.
 R27-100 ohms, 1/2 watt.
 R28-3 1 megohm.
 R29-1 1 megohm, 1/2 watt.
 R31-3,000 ohms, 1/2 watt.
 R32-300,000 ohms, 1/2 watt.
 R35-1-117, 56 and 57 ohms.
 R36-1, R36-2-120 ohms, 75 ohms.
 R37-1, R37-2-75.6, 11.8 and 53 ohms.
 R38-25,000 ohms.
 R39-25,000 ohms.
 T15-Audio output, prim.: 645 ohms d.c., sec.: 310 ohms d.c.
 T16-Composite output, prim.: 2,400 ohms d.c., sec.: 14.5 ohms d.c.

removed from the chassis together with their associated wiring.

Loop tuning circuits V1, R17-2, C4-1, C3-2, R14-3, R19-2, C5-1, R22-2, C4-2, Phaser, C39-1, R12-10, R12-11, C39-2, R21, R22-1, R22-2, R15-1, R15-2, C3-14, C3-13, R16-1, R16-4, C3-16, RE1, R18, C2-1, V2, R14-2, R27, R14-1, R12-12, R14-11, R12-13, R36a and b, R34-1, L7-1, L7-2, C3-1, Cm-2, Z1-1, C37-2, C37-3, C10-2, L8, R12-9, RE2, V12, T16, C5-2, L8-2, R13-2, C39-3, R24-5, R19-1, R22-3, C5-1, R32 and C7.

If the filaments are wired as shown on the circuit, then the filament wiring can be conveniently connected for operation either from a 6.3v. or a 12.6v. source. I feel that it is now time to discuss the mechanical changes which are

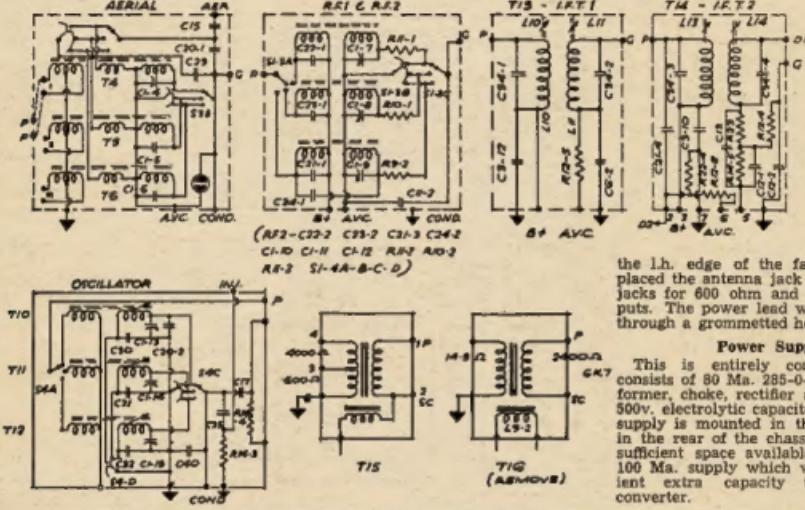
necessary. Since the receiver has a fine reduction gear drive built into it, the writer felt that it should be used. A false front, folded from 16 gauge aluminum sheet, was therefore made as one would chassis, the lips being folded in at the bottom for half an inch. The whole thing was made the same size as the original front panel and $1\frac{1}{2}$ " in depth.

This permitted a cutout to be made for a dial which was made from a sheet of perspex $\frac{1}{8}$ " in thickness to which was cemented a sheet of drawing paper (the solvent for perspex is chloroform). The dial is fixed to the shaft by a single $5/32$ " machine screw tapped axially into it after the assembly has been

turned so that the drive enters horizontally from the right hand side.

If there is no splined adaptor available for the drive one can easily be made by drilling a shaft extension so that it is a force fit onto the male spline or, if the hole in the extension is too large, the cupped end can be filled with molten solder and pushed on before the solder has time to harden. A cap threaded internally to screw on and hold this in place is a decided advantage, but not essential.

In my case I had a meter of the correct type and this was mounted in the top l.h. corner of the front panel. R.f. gain bottom l.h. corner and the a.f. gain shaft passed through the panel in a similar position on the front r.h.s. On



AN ANTENNA FOR THE S.W.L.

BY NORMAN BURTON*

ONE of the hardest problems to solve for the s.w.l. is "what sort of antenna shall I erect?" Books on the matter offer an intriguing variety and a close study of them results merely in increasing the already existing confusion in one's mind. The fact that the s.w.l. is normally a multiband fan, adds yet more confusion to a problem already very murky. What then, to erect?

The antenna offered has been in daily use since 1946 in two continents—Europe and Australia—and can fairly claim to be well tried. It is the acme of simplicity to erect and shows a gain over a 132-foot Marconi, or the length of wire so beloved of s.w.l.'s, of 4 to 6 S points on the S meter of the receiver and it is literally true that signals can be read on it that are completely inaudible on the other previously mentioned.

tioned antennae. No attempt will be made to explain **why** or **how** it works; the writer did once try and work this out, but the effort gave him a violent headache and in consequence the attempt has not been repeated.

It is a version of the Windom and works excellently over the range 10 to 160 metres; it has not been tried on 5 metres, but did work well on 45 to 50 Mc. receiving the East Coast U.S. f.m. stations during 1947-8 most satisfactorily on a Hallicrafters S27 receiver.

To erect the antenna cut the top 33 feet long and tap on the feeder a third the distance from one end, i.e. at 11 feet from one end. The feeder is 41 feet 6 inches long and it is recommended that this length be adhered to, as it has been found to be an optimum length. If you must alter the feeder length, do so in lengths of 1/2 feet so as to maintain the feeder an odd number of quarter

waves long with respect to 10 metres, but if possible try and keep to the recommended dimensions.

It will be found too hard to dispose neatly of 42 feet of feeder, it sounds a lot but once the antenna is in the air you will be surprised how the feeder seems to shorten. A few bends appear to have no effect on performance, but the writer arranges that the first eight or nine feet of feeder hang down at right angles to the antenna.

As regards best direction; in Europe, East and West was found to be best, and though the writer's runs East and West here, it might be better North and South. Of course if you can, put up one in each direction. The antenna has been used with a wide variety of receivers from a 0-V-1 to 19-tube supers and works well with all of them, so now just rush out and get it up, you won't be disappointed I assure you.

* Assoc. W.I.A., HCRS11494; 143 The River Road, Bonyahy, N.S.W.

AN ACCURATE ELECTRONIC TIMER

BY R. BARNETT*

Although it may, at first glance, seem slightly out of place with the usual Amateur equipment, this gadget will do many useful jobs around the shack and is simple enough for beginners to tackle. For those photographic enthusiasts who do their own processing, it can be regarded as an essential piece of equipment for timing the enlarger, etc.

It will provide accurate delayed switching of any circuit of up to 200 watts capacity, the delay being variable from one half second to 85 seconds through five ranges. The original, built by the author, is accurate to plus or minus one twentieth of a second, and could probably be improved beyond this by the use of better quality components, as it was built "from the junk box."

Case and chassis details have been omitted as these are best made to suit odd parts you may have on hand. The original was built on a chassis $4'' \times 5''$ and housed in a case $4'' \times 5'' \times 8\frac{1}{2}''$. The double pole double throw relay was taken from an I.F.F. unit, but could be any relay closing with a current flow of about 5 Ma. and with a resistance of from 5,000 to 10,000 ohms.

The power supply transformer is a standard type with a 6.3 volt filament winding and a 150 volts aside 80 Ma. high tension secondary. The condenser shown in the circuit as 4 μ F. 600V. should be of as high a voltage rating as possible; 600V. being considered the minimum, as any leakage will affect the accuracy of the timer. A paper block type is most suitable.

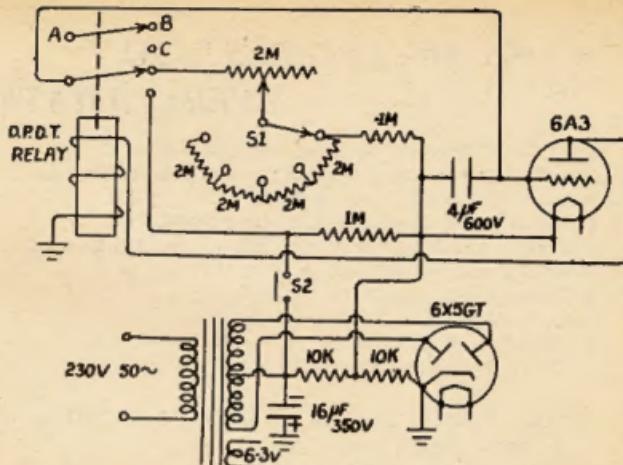
All resistors are 1 watt carbon, with the exception of the two 10,000 ohm voltage dividers. These are 5 watt wire wound.

The switch shown as S1 is an ordinary five position wafer type, while S2 is a push button type, normally open. Connections A, B and C may be connected as desired, depending on whether the circuit is to be normally open or closed. Connection through A and B will give a normally open circuit, closing during the timing period.

In use, the unit should be allowed to warm up for about 20 minutes. Approximately 30 seconds after switching on, the relay will close. The 2 meg-control is then set to the desired position and S2 momentarily closed, when the relay will open and remain so for the pre-set time.

To calibrate the timer, you will have to buy, beg, or borrow a **self starting** electric clock with a sweep second hand. This is connected in series with points A and B. By setting the 2 meg. control and S1 to various positions, the clock will indicate the corresponding time delay when S2 is closed. A suitable dial can be marked out accordingly, and the timer is ready to be put to work.

• VSA Associates, Station Street, Gomory, Vic.



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FOR MONTH OF APRIL, 1955

These amendments are included in the latest issue of the Australian Radio Amateur Call Book.

NEW CALL SIGNS

VK— New South Wales
 2OH—H. C. Harman, 36 Gleeng St., Raymond Terrace
 2AMH—J. R. Howard, 18 Clarke St., Earlwood.
 2ATB—F. R. Gale, 8 Churchill Gres., Cammeray, Sydney
 2AZP—A. H. Parkes, 77 Fenwick St., Bankstown.
 2AZZ—C. H. Harrison, Station Farm 1856, Lake Woy Woy, Griffith, Postal: P.O. Box 1357V, Griffith, N.S.W.
 2ZRM—A. D. Hill, 12 Austral Bldgs., Anzac Parade, Maroubra.

Victoria

2AFU—J. K. Fullagar (Dr.), 34 Sackville St., Kew, E.4.
 2AHQ—H. Denyer, 8 Reid St., Murrumbeena.
 2APH—P. E. Playford, Station: 112 Webster St., Ballarat; Postal: C/o. Police Barracks, Russell St., Melbourne.
 2AZR—P. C. E. Egan, 10 Seymour Gr., Camberwell, E.2.
 2AZV—P. D. Ward, "Barrabool House," Highett, Geelong.
 2ZBJ—H. E. Jennings, Station: C/o. Mrs. M. Hamilton, 37 Byfield St., Reservoir, Postal: 3 Royal Pde., Parkville.
 2AZC—H. E. Jennings, Station: C/o. Mrs. M. Hamilton, 37 Byfield St., Reservoir, Postal: 3 Royal Pde., Parkville.

North Tasmania
 2FCJ—J. W. Millard, C/o. District Council Office, Brandis St., Crystal Brook.
 2ND—D. F. Dawson, 5 Trinity Cres., Salisbury North, Adelaide.
 2LJ—J. R. Lewis, C/o. D.C.A. Mess. Box 270, Darwin, N.T.
 2EAK—C. A. Tidy, 49 Belcombe Ave., Flinders West.

Tasmania
 2IB—L. G. Gillies, Post Office, Andover.
 2RG—R. Garth, C/o. Hydro Electric Commission, Trevallyn, Launceston.

Territories

1JW—J. L. Ward, Mawson, Antarctica.
 1FH—F. A. Van Halzen, Mawson, Antarctica.
 2CK—M. H. Ewen, P.O. Box M, Port Moresby.
 2CW—Wau Radio Club, Wau, N.G.
 2FP—E. Penikis, C/o. Australian Petroleum Co. Pty. Ltd., Port Moresby.

CHANGES OF ADDRESS

New South Wales
 2AL—D. E. Weston, 16 Russell Street, Vaucluse.
 2IF—G. W. Thornton, 5 Fredken Ave., Cammeray, North Sydney.
 2QD—R. H. Dixon, Cr. Hague St. and Prunes Lane, Lavington, via Albion.
 2RT—M. F. Tierney, 71 Telopina Ave., Caringbah.
 2UN—R. J. Scott, 45 Brax St., Inverell.
 2ZB—W. J. Smith, Alford Oval, Leichhardt, St. Young.
 2ABU—A. M. Dan (Dr.), 29 Carr St., Coogee.
 2ADE—A. A. Chetham, C/o. R. Bennett, 8 Belmore Rd., Penshurst.
 2AKD—E. L. Colyer, Station: Vessel M.Y. "Tiki".
 2ALF—W. J. Harris, 82 Brook St., Coogee.
 2ANZ—J. F. Page, Flat 4, 180 Ocean St., Edgecliff, Sydney.
 2AQE—L. K. Turner, Lake Albert Rd., Wagga.
 2ARA—W. N. Short, Station Lot J1 Government Rd., Beacon Hill; Postal: 22 Auburn Rd., Auburn.
 2AVF—F. J. Fairleigh, Lot 30 Hutchins Ave., Dubbo.

Victoria
 2EJ—W. J. Bennett, Albert Hill Rd., Lilydale.
 2FH—D. P.ains, Thomas St., Frankston.
 2OK—J. W. Watson, 2 Newbigin St., Burwood, E.13.
 2CY—C. W. Richardson, 118 Nepean Highway, Cheltenham, S.E.19.
 2EG—J. Page, Ashby Way, Kilsyth.
 2AAC—W. R. Clifford, Flat 4, "Latane," Hughenden Rd., East St. Kilda.
 2ABG—J. A. G. Miller, 234 Malvern Rd., Prahran.
 2AEW—O. G. G. Washford, Cr. Jacks and McNamee Sts., Ferny Creek.
 2AML—R. E. A. Grigson, 40 Bowman St., Morialta.
 2AST—S. J. Lloyd, "Tullamore," Humphries Rd., Frankston.

Queensland

4DI—L. W. Effrey, 223 Dawson Rd., Rockhampton.
 4FH—J. P. Bull, Flat No. 4, Oella's Bldg., Victoria Park, Mackay.
 4LT—A. E. Carter, 68 Dickens St., Carina, Brisbane.
 4MC—D. A. Macpherson, 915 Gympie Rd., Cheraside, Brisbane.
 4WT—N. G. Walling, Macknade Hill, Ingham.

South Australia

5AP—H. R. Hobson, 11 Wood St., Solomon Park, Port Pirie.
 5MW—K. J. Atkins, Laffers Rd., Blackwood Park, Port Pirie.
 5ST—R. Southwood, Station: Private Residence 1½ miles N.E. of O.T.C. Station VID, Darwin, N.T. Postal C/o. P.O. Darwin, N.T.

5UF—R. Fenwick, 7 Spark St., Port Augusta.

5CK—M. H. Hayes, 708 Pearson St., Osborne Park, Perth.

5KL—H. Lester, Watheroo.

5FM—T. F. Moore, 88 Lachner St., West Hobart.

CANCELLED CALL SIGNS

VK—
 2ABQ—K. G. Hawkins.
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 2SF—R. Garth, Now VKYRG.
 2AKG—G. W. Thornton.
 2ASV—R. J. Stevens.
 2ED—K. A. Taylor.
 4FU—J. K. Fullagar (Dr.), Now VKAFU.
 4GD—R. L. Lewis, Now VKSLJ.
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 2ED—D. S. Mackay.
 2AQ—D. A. Ayling.
 2CD—D. F. Dawson, Now VKAKD.
 2SN—A. W. Sowden.
 2EP—W. J. Sperring.
 * See New Call Signs.

BOOK REVIEW

RADIO AMATEUR'S HANDBOOK

The 1955 edition of the *Radio Amateur's Handbook* has recently been released. The American Radio Relay League is proud to announce publication of this thirty-second edition of a book that is internationally recognised, universally consulted and truly the all-purpose volume of radio. Published continuously since 1926, the Handbook has become a leading reference work for hundreds of thousands of radio amateurs, experimenters, students and engineers.

The new Handbook features five basic chapters of basic radio theory, three chapters concerned with history and Amateur Radio operating practices, three of basic experimental data, and fifteen chapters of advanced theory together with practical constructional details, including transmitters, receivers, transmission lines, antennae, power supplies, single-sideband, frequency modulation, keying, amplitude modulation and microwave techniques.

Among the principal revisions of the new edition are those in the vacuum tube tables and base diagrams. Two full pages listing 67 new tube types have been added to the miniature-tube section alone. Further additions include 28 crystal diodes, 18 rectifiers, 17 transistors, and 32 other types. A complete listing of electrostatic cathode-ray tubes also forms a part of the tube tables.

The chapters concerned with very high frequencies have been extensively changed to improve clarity and to take advantage of techniques developed as a result of greater occupancy of this por-

tion of the radio spectrum. Notable in this respect especially is the chapter dealing with v.h.f. transmitters, which includes equipment using tubes developed in the past year.

The high frequency transmitter chapter also has been widely revised. Many new units are included, incorporating such features as continuous (multiband) tuning circuits and clamp-tube protective circuits.

The Handbook is revised and restyled in the light of current needs as a radio construction manual, reference work, and training text for class or home study. 768 pages, 8½" x 9½", including catalogue section and 11-page index. Over 1,300 illustrations (including 95 charts and tables, and 559 tube-base diagrams), and 85 basic formulae. Price in Australia is 44/3.



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REMEMBRANCE DAY CONTEST, 1955

The Remembrance Day Contest is an Australian annual contest to perpetuate the memory of those Australian Amateurs who gave their lives for their country during World War II. It is held on the week-end nearest to the 15th August in each year, the date on which the hostilities ceased in the S.W.P.A.

A Handsome Perpetual Trophy is awarded annually for competition between States, inscribed with the names of those who made the supreme sacrifice, and so perpetuating their memory throughout Amateur Radio in Australia. The name of the winning State each year is also inscribed on the Trophy.

Again this year Amateurs in the VK1 call areas can participate in the Contest. Scoring for contacts with VK1 remain the same, namely, six points per contact per band for all States for contacts with VK1.

RULES

1. The Contest will commence at 1800 hours E.A.S.T. on 13th August and continue through until 1759 hours on 14th August.

2. The Contest is open to all Australian Amateurs, but only members of the W.L.A. are eligible for the awards.

3. The Contest is an open event—w.t., phone, or a combination of both may be used.

4. The Contest is an Interstate Contest, and Amateurs in each State will endeavour to contact Amateurs in all other States.

5. A station may be operated by more than one operator under the station call sign provided that operators, other than the station licensee, submit a separate log under his own call sign for contest purposes.

To implement this rule, the following procedure shall be adopted by all licensees other than owners of the station concerned.

(a) Licensees operating stations other than their own shall, for the purpose of these rules, be hereinafter referred to as "substitute operators."

(b) **Phone Contacts:** Substitute operators will call "CQ Remembrance Day," followed by the call sign of the station they are operating, and the word "log" followed by their own call sign.

(c) **C.W. Stations:** Substitute operators will call "CQ R.D." followed by a group call sign comprising the call sign of the station they are operating, an oblique stroke, and their own call sign.

(d) **Receiving Contestants.** Contestants receiving signals from substitute operators will qualify for points by recording the call sign of the substitute operator only (i.e. the last call sign).

(e) Nothing in (a), (b), or (c) above will preclude the station licensee from participating in the contest himself, provided he submits a separate log under his own call sign.

6. All existing Amateur bands may be used, and all transmissions must conform with the Regulations as laid down in the P.M.G.'s "Handbook for

the Guidance of Operators of Amateur Wireless Stations." Any breaches of these will lead to the disqualification of the operator concerned.

7. The arrangements of schedules for contacts on other bands will not be permitted.

8. All stations entering the Contest will call "CQ RD" if using c.w., and "CQ Remembrance Day" if using phone, subject to rules governing substitute operators under rule 5 (a), (b), and (c) above.

9. A State competing for the Trophy must submit a minimum of six (6) logs from financial members before becoming eligible for contesting the Trophy.

10. Only one contact per station per band is permitted.

11. **Serial numbers** to be exchanged during the Contest will be as follows:

(a) For C.w. the first three figures will be the RST (telegraphy) report, followed by the serial number of the contact commencing with any number between 001 and 100 for the first contact and increasing in value by one (1) for each successive contact. If any contestant reaches 999, he will then commence 001 and continue 002, 003, 004, etc.

(b) For Phone the first two figures will be the RS (telephony) report, followed by the serial number of the contact commencing with any number between 001 and 100 for the first contact and increasing in value by one (1) for each successive contact. If any contestant reaches 999, he will then commence 001 and continue 002, 003, 004, etc.

A complete exchange of serial numbers must take place before any points may be claimed for the contact.

12. In order that an equitable distribution of points for States with a large number of contestants compared with a State with fewer contestants may be determined, a sliding scale of points has been allotted as shown in the scoring table appended.

13. In addition to the points in the scoring table that may be scored by a contestant, a bonus of 25 points may be added to the total score for each State won on 50 Mc. or above.

14. The log submitted must show in the following order: Date, time, band, emission, call sign, RST/No. sent, RST/No. received, points claimed. No log will be accepted unless laid out in this order.

15. A statement signed by the operator must be attached at the conclusion of the log stating that the Regulations (Rule 6) and these Rules have been observed. Any logs departing from this form will automatically be disqualified.

16. All logs must be forwarded through the Contestant's Divisional Council (for membership checking) to reach the Federal Contest Committee, Box 1234K, G.P.O., Adelaide, on or before 10th September, 1955.

17. Attractive certificates will be awarded to the first, second and third highest in each State; there will be no

outright winner for Australia. Where a large number of logs are received from any one State, further certificates may be awarded at the discretion of the Contest Committee.

18. The State to which the Perpetual Trophy will be awarded shall be determined as follows:

To the average of the top six (6) logs shall be added a bonus arrived at by multiplying this average by the ratio of valid logs submitted by that State to the total of Amateur Licensees in the Division at the time of the Contest.

Example: Total points equals—
Aver. Score $\left\{ 1 + \frac{\text{No. of Logs}}{\text{No. of Licensees in Division}} \right\}$

19. The logs which will be accepted for the multiplier under Rule 18 shall show at least five (5) contacts in the Contest.

20. The Trophy shall be forwarded to the winning State in its container and will be held by that State for a period of twelve (12) months when the winners for the succeeding year is determined.

21. The Federal Contest Committee shall be the sole adjudicators and their ruling will be binding in the case of any dispute.

SCORING TABLE

Wt.

	VK1	VK2	VK3	VK4	VK5	VK6	VK7	VK8
VK1	—	6	6	6	6	6	6	6
VK2	6	—	1	2	3	5	4	6
VK3	6	1	—	3	2	5	5	4
VK4	6	1	2	—	3	5	5	4
VK5	6	2	1	3	—	5	4	6
VK6	6	1	2	4	3	—	5	6
VK7	6	2	1	4	3	5	—	6
VK8	6	1	2	3	4	5	6	—

Note.—Read the table from left to right for points for the various States.

Examples:—

VK2 scores	1	point for a VK3 contact.
2	"	" VK4 "
3	"	" VK5 "
VK6 scores	1	VK2 "
2	"	" VK3 "
4	"	" VK4 "

AUSTRALIAN V.H.F. RECORDS

TWO-WAY WORK

Band	Stations	Date	Miles Recd	World Recd
50	VK5SKL-W7ACB/KH6	26/8/54	5355	10000
50	VK4EGM/3-VK1LZ/PF	2/8/53	317	1400
28	VK1AF/3-VK3AAF/3	21/3/54	53.8	—
57	VK3ANW-VK3AKE	11/12/49	51.5	—
1215				100
2300	VK3ANW-VK3EXA	18/8/50	9.2	156
2800				—
10000				108
21000				800
30000				—

It is in the interests of all v.h.f. enthusiasts to notify F.E. through Divisions if you can better these figures. Please give EXACT details of all locations when submitting your records.

ROSS A. HULL MEMORIAL V.H.F. CONTEST 1954-55 RESULTS

WINNER OF TROPHY

VK4NG

R. Greenwood, Rockhampton.

AUSTRALIA

AUSTRALIA	
State	Points
VK2ABC	1397
2HE	795
2ATS	616
2ZX	413
Victorias	
VK3ZL	1424
3XK	765
3YS	728
3KC	464
Queensland	
VK4NG	3490
4WD	1650
4GG	1242
4MT	180
Check log from VK6BO.	
OVERSEAS	
Points	Points
ZL1BJ	1554
2AGD	952
2DS	874
2ADO	710
3RZ	674
First contact to VK6--VR2CG-VK6HK.	

COMMENTS ON V.H.F. CONTEST

Perusal of the call signs in the top logs in each State showed that approximately 50 stations in VK2, 30 in VK3, 15 in VK4, 15 in VK5 and 15 in VK6, VK7, and VK9 were active. An outstanding feature of the Contest was the participation of nearly 50 stations from all districts in New Zealand, VR2CG/ZL3LR is to be congratulated on his fine score and his success in the first VR2/VK6 contact. VK4NG certainly showed great perseverance.

It is a pity that many stations that participated did not submit logs. This meant that no complete checking could be undertaken by the committee. Fortunately the winning entry was so far ahead that the committee was able to feel satisfied with the checking that could be done.

The committee wish to thank those who took the trouble to send comments and suggestions. The rules, as they were framed by the committee and placed before the Divisions for ratification, were to implement the decisions made at the 1952 Convention. There it was agreed unanimously that all v.h.f. bands were to be included in this Contest. Thus it was felt that it would be futile to make it only an Interstate Contest and in order to introduce the idea slowly, rules for intra-State contests and a longer operating time were introduced.

The folly of not allowing the Contest Committee to have the final say in drafting rules for these contests was well shown here when some Divisions vetoed the intra-State working and left its companion rule standing. Since there was insufficient time for any further correspondence on the matter, the rules,

a little "pied-piper-ish" to say the least, had to be published as they stood.

Comments received suggest that scoring be 5 points for the first contact with a maximum of 5 contacts; that the time be shortened; that there be a multiplier for low power mobile operation, etc. Decisions on the 1955-56 Contest, which will be the last using the 50-54 Mc. band, must be finalised this month and the committee will give many hours of serious consideration to them.

I would urge you all to respect their combined judgments, for theirs is a deeper insight to the problems involved as they are in closer touch with Federal Executive and its directive, Federal Council. The committee functioning as a unit can carry out the policy as laid down by the Divisions at the Convention to the betterment of the Institute as a whole.

The Ross Hull Memorial Contest is a fine Contest inspired by a great ideal, to perpetuate the memory of a man whose vision was self-less and inspired. Have faith in your committee for they are motivated by that same vision.

G. M. Bowen, VK5XU, Chairman,
Federal Contest Committee.

NATIONAL FIELD DAY

Logs have been received from the following: VK2WI; VK5 3ADW, 3AHH, 3APB, 3ARJ, 3CE, 3RN, 3SX, 3YS, 3IE, 3ZAM; VK5PS and one listener's log from N. G. Clarke.

AMATEUR BANDS AVAILABLE

*1.84	1.86	Mc.	1288	298	Mc.
3.5	3.8	"	1578	585	"
7	7.15	"	1,215	1,300	"
14	14.35	"	2,300	2,450	"
21	21.45	"	5,850	5,850	"
26.96	27.23	"	10,000	10,500	"
28	30	"	121,000	22,000	"
50	54	"	730,000	54 Mc.	"
144	148	"	Above.		

* Available for emergency network purposes only. Normal Amateur activities are not permitted in this band.

† Temporary allocations.

50 Mc. W.A.S.

Call	Certificate Number	Additional Countries
VK3WJ	13	4
VK3PG	5	3
VK3VW	9	3
VK4HY	2	2
VK4HFR	4	2
VK5LCL	1	1
VK6DW	3	1
VK3RR	6	1
VK3HT	7	1
VK3AEZ	10	1
VK3XA	11	1
VK3GM	12	1
VK3JCL	14	1
VK3ZD	15	1
VK2HO	17	1
VK3ABC	8	—
VK3WH	15	—

PHASE SHIFT NETWORKS

(Continued from Page 3)

band suppression figure at any frequency if the differential phase shift is known.

Suppose the worst deviation is 2% from 90°, then—

$$\frac{\text{desired sideband}}{\text{undesired sideband}} = \tan \left(\frac{2^\circ}{2} \right)$$

$$= 0.0174 \text{ and } 1 = 0.0174 = 57 \text{ (approx.)}$$

This ratio is equal to 35 db., as this is the figure for the point of greatest deviation, the sideband suppression of the unit over the greater part of its range would be in excess of 40 db. (a voltage ratio of 100:1). A departure from 90° of 6° is required before the amplitude of the undesired sideband becomes 5% that of the desired one, a rejection of 26 db. This figure is similar to that obtained with some of the simplest crystal excitors, using two or three crystals, where one crystal is used to eliminate the whole of the undesired sideband. This figure of 26 db. would be about the worst one would want to use, as after all one S point = 6 db. and 26 db. of rejection is not a very good performance figure.

The fetish of accuracy of components, the writer thinks, has been a little overdone. It is all right in commercial practice, but in Amateur circles, where extensive test equipment is not available to check the performance of the complete s.a.b. transmitter or receiver, little will be gained by trying to achieve a ratio of more than 100:1 of suppression of the unwanted sideband (40 db.). The reason for this outlook is that nonlinearity of almost any type in the subsequent circuits (either r.f. or a.f.) following the phase shift unit, and differences in phase shift and distortion in the two individual audio channels, all tend to degrade the sideband suppression of the transmitter or receiving adaptor, and thus "put back" a certain amount of the suppressed sideband.

Fortunately, distortion (non-linearity) in cascaded circuits adds up algebraically not arithmetically. For example, if we have a signal with a distortion content of 1% and we fed it into equipment which has a distortion figure of 2%, the resulting distortion in the output signal is given by—

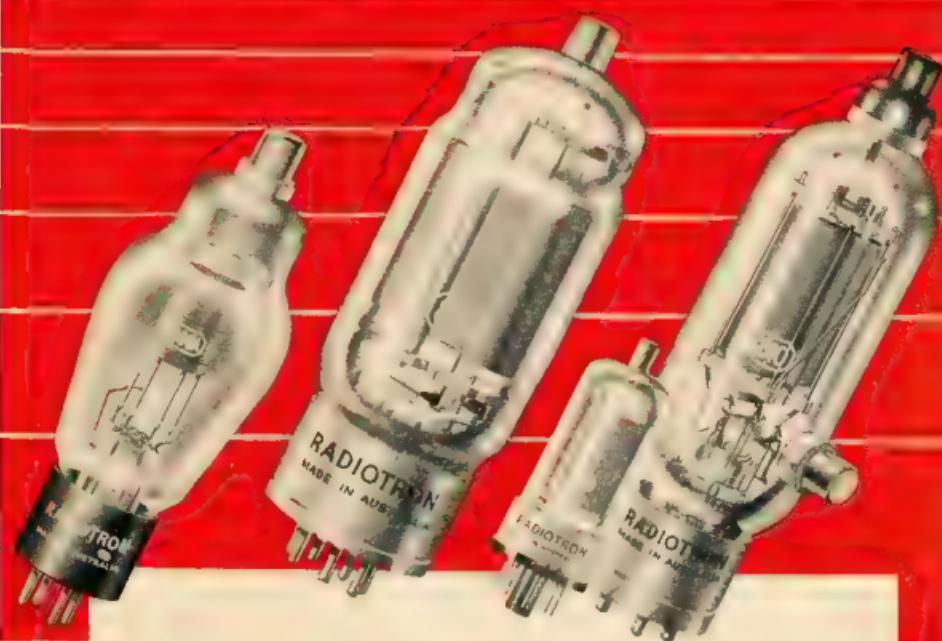
$$\text{distortion in output} = \sqrt{1^2 + 2^2}$$

$$= \sqrt{5} = 2.24\%$$

The reason therefore of running all s.s.b. equipment at a power level where distortion is low will be apparent. It will well repay anyone building up a phase shift unit to spend a little time working out the formula for the lattice type networks for various values of R_1 , differing in steps of 1,000 ohms, and see how the component values change. Also in connection with the above, work out some examples of compensation for one component in a pair by varying the other, using the R/C figure method described. You will worry a good deal less about these units afterwards.

This article has been somewhat lengthy because the maths involved have been kept simple and a lot of it "written around," but it is hoped that audio phase shift networks will not be as big a mystery to readers as previously.

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3Q5	"	6SA7	10/-	12SQ7GT 2/6 VR35 2/6
5V4	10/-	6SC7	10/-	VR38 2/6
6AG7	15/-	6S17GT	12/6	806 2/- VR66 2/6
6B8	15/-	6SK7GT	12/6	834 2/- VR75 15/-
6C5	7/6	6S8T	12/6	884 2/- VR99 5/-
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6K6	7/6	7A8	5/-	1625 2/- VR122 2/6
6K7	10/-	7B8	5/-	5768 25/- VR130 15/-
6K7G	7/6	7C7	2/6	EF50 10/- VT50 2/6
6L7	10/-	7E6	5/-	U10 2/6 VT51 2/6
6L7G	7/6	7W7	5/-	VR18 2/6 VT52 10/-
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1S5	10/-	6C8	5/-	6SK7 10/- 1625 15/-
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3A4	5/-	6H6	5/-	6SN7 7/6 EF50 5/-

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2.5v. or 4v. Filament Transformers 15/- each

Chokes, 15 Henry, 100 Ma. 10/- each

Chokes, 15 Henry 175 Ma. 20/- each

Soler 28 pF, silver plated wide-spaced Condensers 7/6 each

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Relays, A.W.A. Aerial Change-over type, 12v. 15/-

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3263.1 KC.	5456 KC.	7025 KC.	7125 KC.	8171.25 KC.
2112.5 KC.	5530 KC.	7026.5 KC.	7126 KC.	8176.523 KC.
2208.1 KC.	5700 KC.	7025 KC.	7120 KC.	8182.5 KC.
2218.7 KC.	5815 KC.	7042.65 KC.	7134 KC.	8183.5 KC.
3625 KC.	5892.5 KC.	7047 KC.	7135 KC.	8188.889 KC.
6100 KC.	7050 KC.	7150 KC.	8317.2 KC.	
6350 KC.	7052 KC.	7156 KC.	8320 KC.	
3382.5 KC.	6375 KC.	7053.5 KC.	7163 KC.	9061 KC.
3500 KC.	6450 KC.	7064 KC.	7174 KC.	9125 KC.
3511 KC.	6666.7 KC.	7068 KC.	7175 KC.	10 MC.
3511.5 KC.	7005 KC.	7072 KC.	7725 KC.	10.511 MC.
3518 KC.	7010 KC.	7073.5 KC.	7810 KC.	10.515 MC.
3527 KC.	7010.7 KC.	7075 KC.	8007.69 KC.	10.524 MC.
3540 KC.	7011.5 KC.	7077 KC.	8008.5 KC.	10.530 MC.
3825 KC.	7011.75 KC.	7079 KC.	8009 KC.	10.5465 MC.
4019 KC.	7012 KC.	7088 KC.	8009.3 KC.	10.556 MC.
4670 KC.	7013.75 KC.	7100 KC.	8016.5 KC.	14.928 MC.
5050 KC.	7018 KC.	7196.7 KC.	8013 KC.	14.322 MC.

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FEDERAL, QSL, and



DIVISIONAL NOTES

FEDERAL

THE QUEEN HONOURS AMATEUR

A Birthday Honour has been conferred by Her Majesty the Queen on a well known member of the Wireless Institute. The popular President of the VK2 Division, Mr. G. W. Scott, has received the M.B.E. Award in recognition of his outstanding assistance in Amateur Radio, particularly in the recent New South Wales floods.

Members throughout Australia will join with Federal Executive in offering congratulations. Well done Jim, and thanks for your fine work. The honour reflects credit on the Institute.

TELEVISION

Of all the particular aspects of the Television service, probably that of most interest to Amateurs is the matter of frequency channels. These are:-

49	55 Mc.	174	181 Mc.
63	75 Mc.	181	188 Mc.
85	95 Mc.	188	195 Mc.
125	135 Mc.	195	202 Mc.
139	145 Mc.	209	216 Mc.

It will be noticed that the 49-55 Mc. L.v. band results from the change of the Amateur 50-54 Mc. band being changed to 55-60 Mc. This change will take place in 1966. The 135-145 Mc. band involves the change of the 144-148 Mc. band to 145-150 Mc. This change, however, is not promised until 1963.

Amateurs who were on the air pre-war will remember that 55-60 Mc. was one of the authorised bands and was the centre of much experiment before 1939.

A SILVER ANNIVERSARY

An interesting Silver Anniversary which took place last May was that of "THE CALENDAR", the official news sheet of the I.A.R.U. (International Amateur Radio Union).

The Calendar was first issued in May, 1922, and it has been published regularly, except for war years, ever since in June and December. The Calendar was established by the Constitution of 1920, which changed the I.A.R.U. from a

mixture of individual members, national societies, and member-societies to its present form, and its first act was to proclaim the adoption of the then new constitution. Present members on the roster at that time included A.R.R.L., A.R.I., Canadian Section A.R.R.L., R.S.G.B., R.E.F., S.A.R.L. and W.L.A.

FED. CONTEST COMMITTEE

On another page of this issue will be found the complete rules for the 1955 Remembrance Day Contest. These rules are substantially the same as for the 1954 Contest, except that the operating procedure of what we have termed "satellite" stations has been clarified and incorporated in the body of the rules.

Members will remember that last year the Committee was asked at short notice to clarify rule 5 (which, incidentally, has been in the rules since 1936) in regard to their interpretation which was acceptable to W.L.A. members last year and also the Radio Branch of the P.M.G. Department has now been embodied as a subdivision of rule 5.

Your Committee is disappointed they have been obliged to publish the same rules as last year, because it was hoped some formula could be devised to ensure an equitable distribution of points which would fairly reflect the Divisional effort of both large and small States. This has not been due to lack of effort on the part of your Committee and others concerned in the popularity of this Contest.

Most comprehensive proposals were made by your Committee, Major Mitchell, of Federal Executive and Bill Falconer, our Actuary. The Committee also received most constructive suggestions from the V.R.C. Division.

It appears, however, that no two States could agree on a formula acceptable to the various members concerned and as a result the rules must remain the same, at least for this year.

The Committee wishes you all the best of luck in the Contest. We would like to see as many participants as possible enter the Contest this year in the interest of their Division

to whom they owe their support. May the best Division win.

The Committee proposes to publish in the form of an article in the August issue of this magazine some suggestions on operating procedures, particularly those of the "One and Done" which will assist the Committee in checking logs. Please do your best to follow these suggestions because we can assure you they will help the checking Committee very much, especially at 6100 in the morning during peak periods when their grid drive is very low!

FEDERAL QSL BUREAU

RAY JONES, VK3MJ, MANAGER

A QSO with YJ1DL brought to light some interesting information on affairs in general in the New Hebrides. He reveals that prior to taking up duty there was ZC5AB on Christmas Island for some time. He was also in the Y.L.A. for a short time, as well as VK4 but he liked the island better. Informed me that an old time friend in Frank Harvey, YH1RV, had passed away about two years back. Frank, who was at Ept. Benbow, would be well known to many of us. He was a real old timer. YJ1DL also informed me that there are three French Amateurs there although YUAC is presently on furlough in France. They seldom work non French-speaking Amateurs owing to their knowledge of English being very poor. YJ1DL is currently using 250 watts, but his normal input is 80 watts. The higher power is too costly owing to the power charges being two shillings per kw. hour. Says life will be a little dull from June onwards as the plane service is due to cease. He is still a financial member of the N.S.W. Division and states that sometimes he receives "Amateur Radio."

Jim Pernish, V3DQ, of Baling Estate, Kuala Kang, Malaya, again puts his paper to say he will be going on leave to England in July next and returning to Malaya in 1966. He is disappointed at the tardy response to QSLs, which has him held up on D.C.C., E.A.T.V. and W.A. As QSL Manager for the M.A.R.T.A. he states that for many months

AN OPEN LETTER

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MIC 36



Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

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Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.

Output level—55 db ref. 1 volt/dyne/cm².

Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.

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Connector—Standard International 3-pin.

MIC 18



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SPECIFICATION

Output level:—55 db ref. 1 volt/dyne/cm².

Cable—approx. 4 ft. of co-axial supplied.

Weight—6 ozs. unpacked, 7 ozs. packed.

Dimensions—microphone only 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{1}{2}$ " thick.

MICROPHONE INSERTS



(MIC 32 illustrated)

CRYSTAL MICROPHONE INSERTS

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MIC 32 insert, £2/15/6; all others, £1/19/6.

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This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 + R$, where $F = \text{c.p.s.}$, $R = \text{megohms}$. An adaptor (floor mounting) is available at low extra cost.

MIC 22



SPECIFICATION
Output level = —50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.

Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

LAPEL MICROPHONE

MIC 23



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Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. —55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-8/16" wide x 2 $\frac{1}{2}$ " long x $\frac{1}{2}$ " thick.

HAND OR DESK MICROPHONE

MIC 33



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This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MICROPHONE INSERTS



(MIC 23 illustrated)



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25 WATTS: 20-25,000 c.p.s.

Primary: 5,000 ohms.

SCREEN TAPS: 10% of Plate Z.

V.F.: Five or minus 1 db 10-50,000

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Leakage Inductance:

5%P/5%P: 15 mH. maximum.

Prim./Sec.: 20 mH. maximum.

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For VALVES:

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etc.

See "Radio and Hobbies" of Feb.
1951, 1200, 17 watts U.L.
Amplifier.

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Primary: 4,000 ohms.

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V.F.: Five or minus 1 db 10-50,000

c.p.s.

Leakage Inductance:

5%P/5%P: 15 mH. maximum.

Prim./Sec.: 25 mH. maximum.

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at the nick of time along comes a letter from one or other of the country areas which saves the day for me. This month I have news of the Port Lincoln area, an area incidentally that has been silent for some time in these notes. My correspondent is Wally SDF and he tells me that the area was honored recently by a visit from the worthy Vice-President, John SMC, who was on a working visit, but very busy and unfortunately could not be shown the sights. Wally SDF is a good operator and it is hoped that on his next visit he will have time to meet the boys and perhaps check up on the highly reputed DX conditions that are said to prevail in large chunks.

Another welcome visitor is Charlie SCL, who did not see many meteor cycles out, definitely did see quite a lot of the 50 cycles. He visited the local 30 cycle hatchery and under the guidance of Wally SDF was very impressed with what he saw.

The atmosphere is at long last being bombarded with signals from the antenna of Put SLT on 20 mx, although as yet there have been no reports as to the signals arriving at any place. His wooden tower is not up in the air yet, but from what I have seen it did not look good. Jack SVJ always seems to be busy these days fixing up other people's sets and therefore has had no time to chase the spiders out of his tx room. However, he must slow down some time or other and get rid of his spiders, before he comes. Wally SDF was very pleased to have him come, with his moderate nine watts recently when strange noises and odd smells indicated that the contact was finished ahead of schedule, due to the power transmitter making the unwelcome decision to switch off. The next order of the day was decided that it would be a good time to re-build the buffer and final stages of the tx, or to put it bluntly, enjoy himself to the full diving into the inwards to see just what it is that tickles. Many thanks for the news Wally, always remember that no news is bad news for me.

To Charlie SCL goes our deepest sympathy in loss of his wife this month. It is extremely difficult to put into paper just how one feels in moments like this, and I doubt I can say that this is the time that a great healer and our thoughts are with him in his sadness.

Incidentally, in last month's notes I said that Alan SVO was well on the way to good health and that he had been home for a few days. He had a relapse and will be confined to the hospital longer than was at first thought. Sorry to hear it, but keep the chin up, and here's hoping that you will soon be on the jolly old front again. Tom SBL is the proud father of a bonny bouncing boy, that has just arrived to come through the ordeal quite OK. We nursed him through the last three or four days successfully although he gave us an unexpected surprise the last few hours. We are happy to advise that the young lad is a father as yet. Congrats, Pat, just fancy, another prospective Amateur in the family; do you feel hysterical with joy?

SOUTH EAST AREAS

The meeting night of the S.E. gang for May was held to a representative gathering who thoroughly enjoyed the entertaining evening. Eric SKW, who had just returned from holidays in VK3, provided the main entertainment for the night by projecting some excellent colour photos taken during his tour. Hales Gap, Ballarat, Bendigo, Geelong, Warrnambool, and several other places which he had visited. The gang also had the proofs of the photos taken of the boys and the R.D. (though for personal, and many and varied were the topics discussed as to the photographic possibilities of those in the said photo proofs! Supper concluded the night and everybody present voted it one of the best gatherings to date.

Eric SKW has been fairly active on the air to report for this month as he has been away on annual vacation, but with the arrival of the colder weather, no doubt he will be heard more frequently. John SFD was heard on 40 mx, but no callers yet, eh? OM? Claude ACH has been quite active on 40 mx, though power is getting out extra well. He could not attend this month's meeting because he was sojourning in VK3 and if he runs true to form he will have accumulated quite a pile of disposal equipment by the time he returns.

Col SCL has also been active on 3 and 40 mx carrying out his usual skeds. How is the family OM? Leo SZAG has completed his new beam, but is having a little trouble getting it to stand. The trouble is that the trees in the vicinity are thicker with these new poles and keep putting the elements out of alignment. Perhaps Jim SJX will lend you one of his many umbrellas and then you can work at the

base of the beam without any qualms! Brian SZAR is among the missing for this month, but if all can be believed he is doing real well. Judging by the VK3 v.h.f. notes in the magazine he should be more than satisfied.

Stuart SWS has had a quiet month, as far as the air is concerned, anyway, but has been working on the construction of a 2 mx xtal controlled converter, and hopes to have a 5/8 array up very soon. He has been doing a lot of listening, although finding a little time for activity on 20 to 40 mx. Not many contacts as to any new countries, only two this month, but when one reaches the stage of Stuart with respect to new countries, this is not to be sneered at. John SJA not active as yet, but the boys have hopes for him. Fred GSF said recently, he has probably finished his thoughts off of Amateur Radio for the present. Incidentally, Pre SPS is very keen on the new eraise of color films and very kindly offered to lend a portion of his in color. He said that he will be able to do the same with his new cinematoscope camera. He tells me that is the only way he could fit me in the viewfinder. Could he be kidding me? Les SAX, of Gawler, now has a grand new set-up with a 6146 in the front end, and is doing magnificently thank you. He is still changing his antenna, but is still not satisfied, either the feeder does not feed or the radiator does not radiate. If I may use the words of a cleverer man than I, "because you put a reader on the Junior op, it does not necessarily mean that he will eat". Thank you, Ron SPS.

I received a post card today from Brisbane showing a decidedly red nosed character holding an outside drinking utensil containing another drinking liquid. His name is John on his face and the colour of his nose is he is no stranger to the said liquid. The words on the back of the card tell me that Arch SCK cannot hear my 80 mx signals in Brisbane, and with a touch of the pen I can see that he is the cat that killed and ate the canary. I repeat that he could not hear my signals in Adelaide, let alone in Brisbane. Ho hum! Have a good time Arch!

Speaking of VK4. Associate members representative on the VK3 Council, Jim Potts, is spending a couple of months in that fair State. He recently disposed of his grocery business in a northern suburb for several millions and is determined to relax in luxury for some time to come. If any of you VK3 chaps should see a tall handsome stranger with a well left hand lazily strolling down a main street in VK4, watch to see if he opens his wallet. If a couple of motifs fly out, that's Jim!

WOOMERA RADIO CLUB

Ray SFT is given pride of place in the news from Woomera this month because of the fact that he has become a father for the third time. Unfortunately he has been sent to the hills, but from all reports he is now well on the road to good health. Once again I must repeat that we have never lost father in VK3: mind you, we have gone close, but we fathers are made of stern stuff, and are sometimes liable to be overlooked by the XYLs. The two aspirants named for the A.O.C.P. from the club appear to be very promising, and by the time this appears in print, Keith and Bernie should know just how they are having. Best of luck to you, but don't worry, if the first time all goes very, much better than you have sat more than once, I began to lose heart after the fifteenth time! Sidney, who is starting back in the field slightly, is doing real well in his studies and a future engineer is in the making. Keep it up OM.

Ron SFT recently took his rig in to the radio room and put an antenna up for it, which added to the rhombic, two centre fed zepps and an end fed vertical, makes it even harder to get inside the shack these days. Ron makes some remarks concerning the fact that the serials have been able to pick up 3XU and 3MD, but as yet no SPS. My customary "water off a duck's back" attitude enables me to treat such nasturtions with suitable ignores.

TASMANIA

The Field day held at Richmond on 13th May was well attended despite very gilly winds and threatening clouds. There were about 150 entries for choosing such a good spot, and also for the trouble he went to in placing marker flags for the cross-paddock drive in.

The 20 and 3 mx tx's were concealed in a hole behind trees and across the river bank by Leo SZAG. It was not until Leo was using a bulldozer next time chaps, so don't forget to take a spade along. First home was TCA closely followed by TOM, TLZ and then TCA. Eric, Benji, and myself and YPM. The "trophy" of course is now in the custody of TFM, who hopes to use it as a cavity resonator until such time as he has to hand it over.

An expert throw by Mrs. TLZ placed her first in a "throwing the rolling-pin" contest. Could it be that you are an artful dodger, Len?

A blind-fold tx hunt provided quite a bit of amusement for the enclosers, and TFM turned the tables by registering a shortest time, whilst R. H. H. (Hawthorn) was the blindfolded friend walking into the river after the elusive criminal. Len's (TLZ) time was considerably extended by the fact that the tx never seemed to be at the right place at the right time. I think a certain amount of malicious enjoyment was had by pushing the timer out of Len's reach. Just goes to show, Len, don't leave the car unlocked next time. On second thoughts though, if it's to be a bulldozer, that will slow them down quite a bit.

The general meeting for June was held at the usual spot with about 21 present, and presided over by TFM. The lecture, given by David Johnson, was entitled "Wild Life on Macquarie Island". It proved most interesting indeed. David used colour slides and made many points in his lecture to a most appreciative audience. That reminds me, congrats, are due to David on passing the A.O.C.P. and we hope to hear from you in the near future.

Meeting from TFM. TLZ with regard to a pending hunt and a field night were held over pending better weather.

TMH at Richmond has acquired two new antenna poles and is also becoming interested in a 20 mx. I would like to recommend the 2 mx band as being quite free of the RHM troubles experienced lower down. It's frequently quite free of everything else too, but we can hardly blame the band for that. Barney was in busy arranging a disposal rx for 144 Mc., and when the job was done, you will have to bring more pleasure to both Tom, Barney, as you can work one way and about the other. XYLs permitting, of course.

Tom TLZ is spending some time exploring the transmission line. I understand he has a transistor rx working on 144 Mc. I think the XYLs will be looking in your direction soon, Len. After his recent sojourn in hospital Athol TAJ is now up and about again, and due his contribution of £5.00 to the club. Don't you think it's about time in settling down to business and not have a beam up and working on 20 mx. Smart work, Doug.

The old grape vine brought to light some interesting news on TDF's activities. Apparently Dave, having recently made a wire enclosure, finds now that the lounge room fits it more closely than calculated—or vice-versa. Anyway the two have to be separated and helpfully arranged (segregate barred) would probably be appreciated. Certainly it is a "run" turn, Dave.

Tom TAL, having moved to a new QTH, was dismayed in a radio sense, of course, to find the band was noisy. Best of luck sell a TDF to Doug. Tom and when you are together you can absorb each other's energy in the terminating resistors. Associate Sandy Powell (Spegs to you) has succumbed to the audio bug and is sinking quite a bit into the music business. He is a double tuner and all the trimmings. After a few months of trouting I believe all is now working with such relish that he has to switch it off, because it makes him feel he is back at work.

NORTHERN ZONE

Congratulations have been pouring into the TRB domicile on the arrival of the long-awaited son and heir. From IGM comes news that a mobile 2 mx tx is well under way, whilst a 40 mx is also in the works. TDF has been fitting very successfully into a dummy load, with this and the recently completed multi-band rx, Gordon will be a force to be reckoned with in the R.D. Contest. If one is to believe all one has to do is to travel, TCA, is outdoing the exploits of Marco Polo. TLX is settling in well in the new job.

TLZ and TBF have been busy with v.h.f. gear. TAF appears to have deserted the Amateur ranks, but present in the local v.h.f. men are very happy with the bi-weekly news info. on the ABC Tasmanian stations at 1225, since quite a lot re temperature inversions is given. As yours truly, TWK (deputising for TCA) is leading Tasmania to take up an appointment with VEA, "representatives of Australia", here's a suggestion. For the next annual meeting how about making a real outcry of it by all zones meeting at Wadadamanu where all accommodation facilities are available?—7XW.

NORTH WESTERN ZONE

News from the central highlands indicates that the Amateurs in that locality are very enthusiastic about v.h.f. and have gone to a great deal of trouble in order to get signals in and out. The first two amateur aerials have been constructed and mounted, the vegetal polarization on Mt. King William and Mt. Olym-

pus and horizontally polarized on Brady's Lookout, which are all over 4,000 ft. in height. These aerials are beamed towards Launceston and anyone hearing signals from them are requested to contact IWIN or Mr. Bill Ion, of Bronte Park. It is expected that the installation of these aerials on the Launceston site will be completed by the end of the month.

The last general meeting of the zone was a combined meeting held at the home of TSW where a very good attendance welcomed two new Associates to the zone. At the meeting it was decided to continue work on a 3 m gear ready for the coming summer. The meeting closed with a few words in honour of the late Murray Richardson, TMR, and then adjourned to light refreshments and a demonstration of amateur columns which proved extremely interesting.

A visit from TAI the other day disclosed of many adventures in holiday form in VK3 land and now he appears almost broke with only a few pieces of junk to show for his addled about. Good luck to you, Ken, wish it had been me.

PAPUA—NEW GUINEA

News from VK3 this month is somewhat restricted due to the fact that the boys have been QRL, or just plain forgetful. One bright spot, however, which will most likely provide an incentive to others to try their luck, was the fact that Frank HFN, with nothing better to do, decided to go to the 10 m band on 28.1. He hopefully called CQ. Imagine his surprise when a G station answered his call. To prove it wasn't a fluke, Frank decided to try again, this time another G, quickly followed by a PAO. Not satisfied with that, and chasing

his luck, Frank then worked a couple of W stations. Won't be long now, then one will find VK3s dotted throughout the 15 Mc. band during the long winter evenings in the Southern Hemisphere. Most likely see you there Frank on your evening soons.

The VK3s are arranging a Convention to be held, we believe, in Lae. Desires that some VK3s have expressed their desire to visit us when and where arrangements have been finalized. Perhaps, too, the names of the other stations will be interested. You can be sure that the conviviality and hospitality will be second to none as we do know how to do these things. Lots of arrangements to be made, organizing to be done, but details will be made available to all those who may be interested as soon as possible.

This year the VK3s gang intend to field a full team in the R.D. Contest. Details are top secret of course. More than my life is worth to divulge them. I can say this though, "All the participating stations intend to work the clock stations and the 10 m band will be a big help in keeping the gang on their toes, or should we say, glued to their chairs. Just watch our smoke! An alarming thought just occurred to yours truly. Suppose the h.t. transformer turned its back on us and we had to use a 1000 volt idea of ideas in doubt, but what a horrible thought."

VCS has been visiting the Highlands. Heard recently from SRC in Wau. Hope you can make it sometime soon from your own QTH. Carl Regulars on the Sunday net: SFRN, SRC, SRM, SMT, SAU, SFR, SFR, SFR, SFR, SFR, SFR. Would like to see the other VK3s join in the Sunday morning net on 7050 Kc. at 1600 hours.

SOS using a quad cube on 15 m and getting some good reports. Bob also has a 3 el. beam almost completed for 14 Mc. Looks very impressive, too. Ron HRC due to go on leave

soon and expects to bring back a brand new rig with him from Australia. RHD SWP still thumping out a signal with his 4 watts and getting in amongst the W stations. SWB still in the process of building out his rig and is to be seen on for the Sunday net. John WKT was QRL with official business lately and unable to devote much time to Amateur Radio.

All for this month gang, but please drop me a line every now and then so that we will be able to make something out of this column.

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CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

ANSWERS TO VENK

Editor "A.R."—Dear Sir,

With reference to Tom Mulder's (VK3MK) letter published in your last issue, may I use whatever space you may have?

Mr. Mulder transgresses four of the six clauses in the time-worn Amateurs' Code of Ethics—a code which we Amateurs have zealously treasured since the earliest days of Ham Radio.

Number 2 clause reads: "The Amateur is Loyal to the desire to put out the Uniform Constitution adopted by all States except VK3s, does not discriminate against Limited Class Licensees. The fact that the VK3 Constitution presently discriminates, is an act of disloyalty to the Institute as a whole. This is a definite disloyalty until the VK3 Constitution is amended in line with the Uniform Constitution as now proposed."

Number 3 clause reads: "The Amateur is Progressive." A change in time (we are now in 1955) requires a change in outlook. Limited Class Licensees and the VK3s today. Mr. Mulder fails to discriminate against them because they can't read Morse and can't operate on the lower frequency bands. Such an attitude is unprogressive and should be condemned.

Number 4 clause reads: "The Amateur is Friendly." I condemn Mr. Mulder's attitude of unfriendly and unfriendly Constitution of the VK3 Division barring Limited Class Licensees from full membership, an unfriendly, provocative and likely to cause unrest and schism within the Institute.

Number 5 clause reads: "The Amateur is Balanced." Mr. Mulder is dead against the Limited Class Licensees. The attitude is unbalanced and is unbecoming of a Ham and a gentleman.

I see nothing frightening in the prospect of Limited Class Licensees taking office in the Institute. In fact, I see nothing but good in the thought that they can do so. Who can it be imagined that Limited Class Licensees are not to be trusted in office because they can't read Morse or operate on the lower frequency bands, is completely beyond me. Such licensees are just as much Ham as any other on the lower frequency bands and discrimination against them is unjust and unwarranted in the extreme.

If friend Mr. Mulder had sat down and thought about the subject a little more, he would not have written in the vein that was published in June.

Tom Mulder would go up in the estimation of Ham if he would be big enough to withdraw his letter and apologize to the Limited Class Licensees.

—GORDON WEYNTON, VK3KU.

Editor "A.R."—Dear Sir,

Being a Limited licensee, I would like to make a reply to Mr. Mulder's letter in June "A.R."

His main point is the assertion that Limited Licensees are not interested in the h.f. bands. I don't know what the position in the other States is, but here in VK3, the Z boys I've worked, as well as myself, are still interested in 40 and 20 etc., and a number of them are working hard for the Morse. They may transmit on other bands. Working overseas countries, a thing very rarely done on v.h.f. bands, has a fascination all its own and most amateurs get the DX bug at some stage of the game. There is no exception.

I and I think many of the other LL's regard the Limited ticket as a means to an end. Lack of time or some other reason prohibits some keen Associates from passing the Morse. They pass the theory and reg's. OK, they are probably not interested in the Morse, but they put out a Limited. Then they may sit for the Morse at their leisure and not bother about the theory or reg's. exams. Before, the Morse had to be passed within a year of passing the theory and reg's. Now, the unfortunate student has to start all over again. This is my opinion. I think does away with the possibility of having a Divisional Council, or an F.E., composed of L.A.O.C.F. holders. In time, most of the present L.A.O.C.F. holders will be over 40, and if they don't and, if, as Mr. Mulder thinks, no full licenses (or very few, anyhow) are taken out, then ultimately there won't be anyone to use the lower frequencies and so the h.f. bands wouldn't matter anymore.

I think the main point of polemic at the matter is to regard the L.A.O.C.F. as an extra rung in the ladder leading to full Amateur status. Despite the fact that I am now a M.W.I.A., I don't regard myself as a full Amateur and I will not consider myself as a full Amateur and gain experience on the lower frequencies. New blood is coming into the Institute in the person of Z call holders, and, of course, this is full to the good. By admitting a LL to full membership, the Institute will be full of W.I.A.s. The W.I.A. is not increased. If a LL could only join as an Associate (i.e. non-transmitting member), then, I for one would not be satisfied. The only alternative, as far as I can see, is to create a new class of membership, but this leads to administrative difficulties and can cause a type of "class distinction."

The Institute, in my opinion, has done the right thing in making LL's full members. It is a privilege, and I am proud and happy to say that I am a full member of the W.I.A.

—DAVID RANKIN, VK3ZQ.



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